

Multicast VLAN Registration

(MVR)

Ethernet Switch

Support Notes

Version 3.80

August 2007



Overview of MVR

MVR refers to Multicast VLAN Registration that enables a media server to transmit multicast stream in a single multicast VLAN while clients receiving multicast VLAN stream can reside in different VLANs. Clients in different VLANs intend to join or leave the multicast group simply by sending the IGMP Join/leave message to a receiver port. The receiver port belonging to one of the multicast groups can receive multicast stream from media server. In the Figure 1, without support of MVR, the Multicast stream from media server and subscriber must reside in the same VLAN. For each VLAN, A media server is required to transmit multicast stream once and totally, media server transmits 6 times. In the Figure 2, on the contrary, with MVR, a media server is required to transmit multicast traffic once to all the clients in different VLANs.

Figure 1

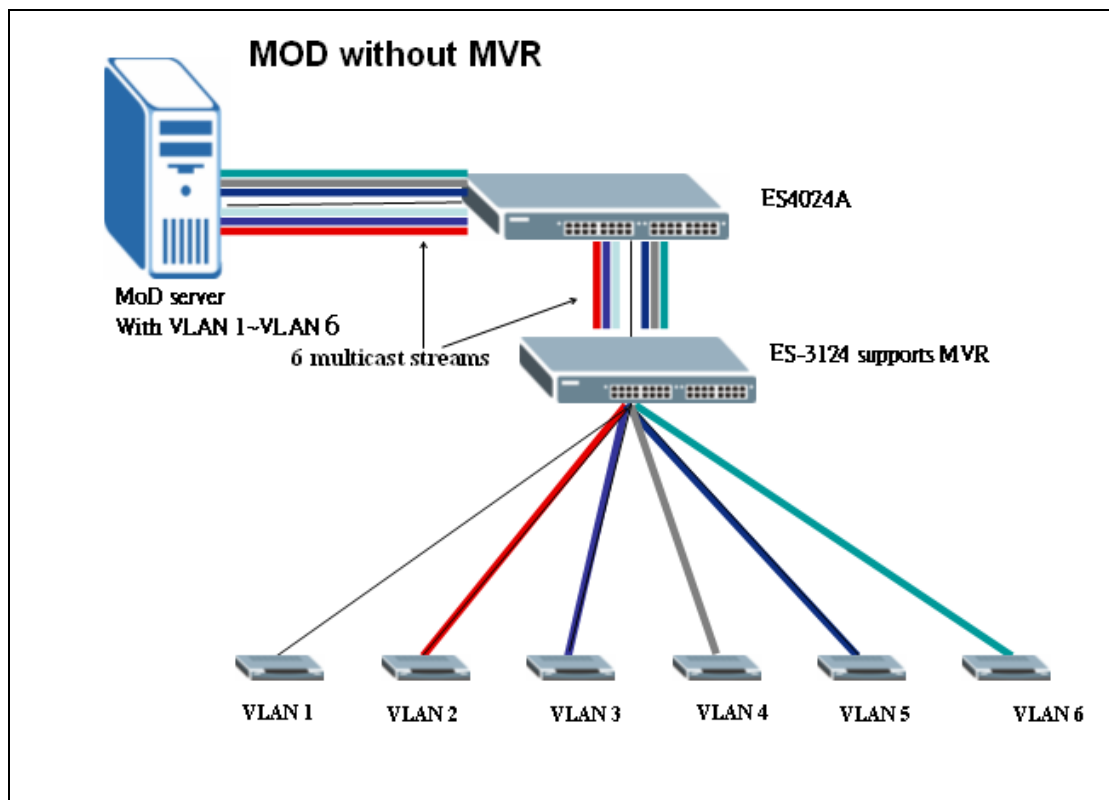
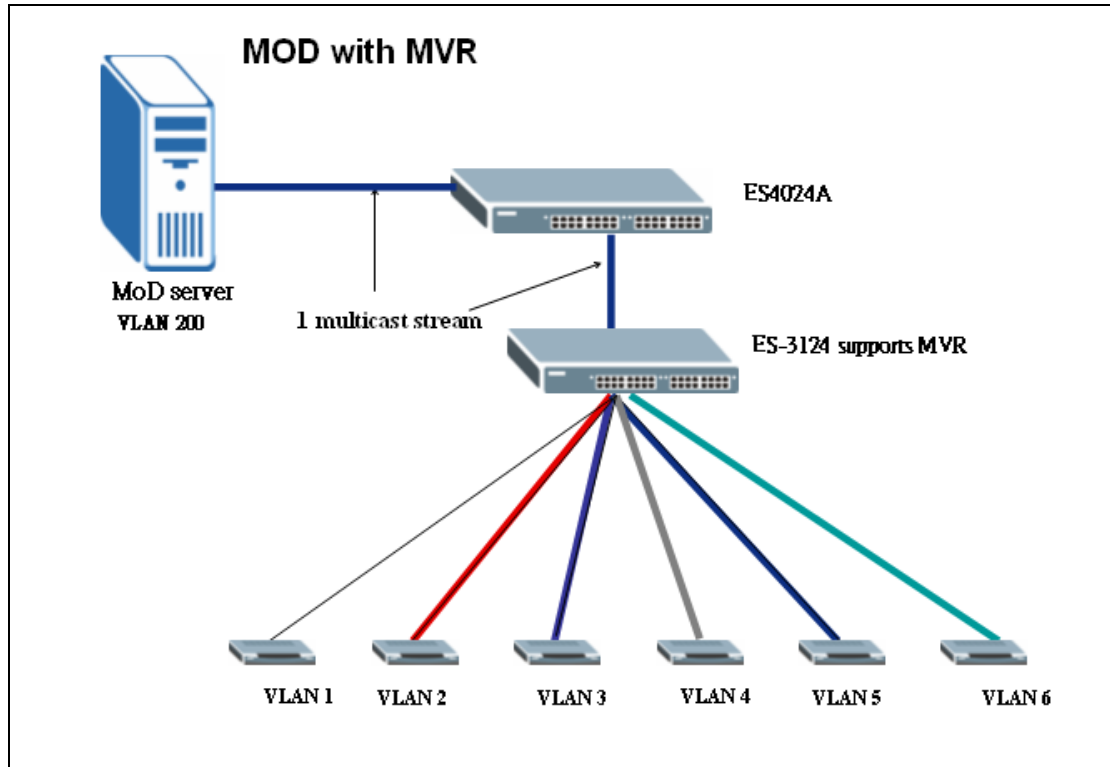


Figure 2


MVR Mode

◆ Dynamic Mode

If we select the dynamic mode in MVR setting, IGMP report message transmitted from the receiver port will be forwarded to a multicast router through its source port. Multicast router knows which multicast groups exist on which interface dynamically.

◆ Compatible mode

If we select the dynamic mode in MVR setting, IGMP report message transmitted from the receiver port will not be transmitted to a multicast router. Multicast router must be statically configured.

Operation Mode

◆ Join Operation

A subscriber sends an IGMP report message to the switch to join the appropriate multicast. The next depends on whether the IGMP report

matches the switch configured multicast MAC address. If it matches, the switch CPU modifies the hardware address table to include this receiver port and VLAN as a forwarding destination of MVLAN.

◆ **Leave Operation**

Subscriber sends an IGMP leave message to the switch to leave the multicast. The switch CPU sends an IGMP group-specific query through the receiver port VLAN. If there is another subscriber in the VLAN, subscriber must respond within the max response time. If there is no subscriber, the switch would eliminate this receiver port.

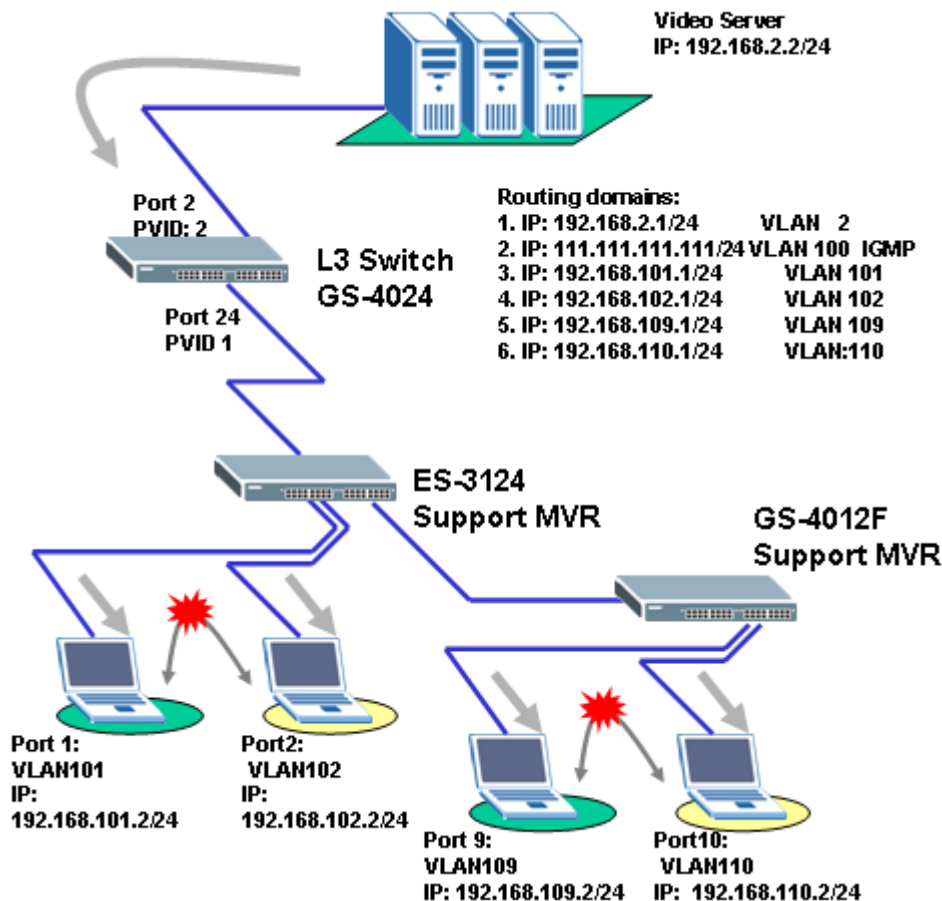
◆ **Immediate Leave Operation**

Subscriber sends an IGMP leave message to the switch to leave the multicast. Subscribers do not need to wait for the switch CPU to send an IGMP group-specific query through the receiver port VLAN. The switch will immediately eliminate this receiver port.

Scenario of MVR

In the following section, we will provide an example to illustrate how to configure MVR. In this scenario, the media stream from the media servers will be transmitted from port 24 of GS-4024 (an IGMP Router) to ES-3124 (L2 edge Switch) and GS-4012F (working as L2 edge Switch). On switches ES-3124 and GS4012F, we enabled the MVR function to allocate the multicast traffic from GS-4024 to separate VLAN hosts located on ES-3124 and GS-4012F. Moreover, we created a dummy ip interface for the multicast VLAN (VLAN100) on GS-4024. VLAN100 will be the Multicast VLAN in this scenario.

Illustration of this scenario



Configuration via Web L3 Switch [GS-4024]

1. First of all, we need to create all those IP domains on the GS-4024 Switch.
Once we completed creating those VLANs, our VLAN status should look the same as the one on the figure below.

VLAN Status The Number of VLAN = 7

[VLAN Port Setting](#)

[Static VLAN](#)

Index	VID	Elapsed Time	Status
1	1	0:14:43	Static
2	2	0:11:29	Static
3	100	0:11:02	Static
4	101	0:01:52	Static
5	102	0:09:04	Static
6	109	0:08:39	Static
7	110	0:04:05	Static

VLAN Detail

[VLAN Status](#)

VID	Port Number												Elapsed Time	Status
	2	4	6	8	10	12	14	16	18	20	22	24		
	1	3	5	7	9	11	13	15	17	19	21	23		
1	U	U	U	U	U	U	U	U	U	U	U	U	0:00:43	Static
	U	U	U	U	U	U	U	U	U	U	U	U		

VLAN Detail

[VLAN Status](#)

VID	Port Number												Elapsed Time	Status
	2	4	6	8	10	12	14	16	18	20	22	24		
	1	3	5	7	9	11	13	15	17	19	21	23		
2	U	-	-	-	-	-	-	-	-	-	-	-	0:08:00	Static
	-	-	-	-	-	-	-	-	-	-	-	-		

VLAN Detail

[VLAN Status](#)

VID	Port Number												Elapsed Time	Status
	2	4	6	8	10	12	14	16	18	20	22	24		
	1	3	5	7	9	11	13	15	17	19	21	23		
100	-	-	-	-	-	-	-	-	-	-	-	T	0:08:07	Static
	-	-	-	-	-	-	-	-	-	-	-	-		

VLAN Detail

[VLAN Status](#)

VID	Port Number												Elapsed Time	Status
	2	4	6	8	10	12	14	16	18	20	22	24		
	1	3	5	7	9	11	13	15	17	19	21	23		
101	-	-	-	-	-	-	-	-	-	-	-	T	0:00:14	Static
	-	-	-	-	-	U	-	-	-	-	-	-		

VLAN Detail

[VLAN Status](#)

VID	Port Number												Elapsed Time	Status
	2	4	6	8	10	12	14	16	18	20	22	24		
	1	3	5	7	9	11	13	15	17	19	21	23		
102	-	-	-	-	-	U	-	-	-	-	-	T	0:07:54	Static
	-	-	-	-	-	-	-	-	-	-	-	-		

VLAN Detail

[VLAN Status](#)

VID	Port Number												Elapsed Time	Status
	2	4	6	8	10	12	14	16	18	20	22	24		
	1	3	5	7	9	11	13	15	17	19	21	23		
109	-	-	-	-	-	-	-	-	-	-	-	T	0:07:48	Static
	-	-	-	-	U	-	-	-	-	-	-	-		

VLAN Detail

[VLAN Status](#)

VID	Port Number												Elapsed Time	Status
	2	4	6	8	10	12	14	16	18	20	22	24		
	1	3	5	7	9	11	13	15	17	19	21	23		
110	-	-	-	-	U	-	-	-	-	-	-	T	0:03:39	Static
	-	-	-	-	-	-	-	-	-	-	-	-		

2. The related PVID settings are shown below.

VLAN Port Setting

[VLAN Status](#)

GVRP	<input type="checkbox"/>
Port isolation	<input type="checkbox"/>

Port	Ingress Check	PVID	GVRP	Acceptable Frame Type	VLAN Trunking
*	<input type="checkbox"/>		<input type="checkbox"/>	All <input type="button" value="v"/>	<input type="checkbox"/>
1	<input type="checkbox"/>	1	<input type="checkbox"/>	All <input type="button" value="v"/>	<input type="checkbox"/>
2	<input type="checkbox"/>	2	<input type="checkbox"/>	All <input type="button" value="v"/>	<input type="checkbox"/>
3	<input type="checkbox"/>	1	<input type="checkbox"/>	All <input type="button" value="v"/>	<input type="checkbox"/>
4	<input type="checkbox"/>	1	<input type="checkbox"/>	All <input type="button" value="v"/>	<input type="checkbox"/>
5	<input type="checkbox"/>	1	<input type="checkbox"/>	All <input type="button" value="v"/>	<input type="checkbox"/>
6	<input type="checkbox"/>	1	<input type="checkbox"/>	All <input type="button" value="v"/>	<input type="checkbox"/>
7	<input type="checkbox"/>	1	<input type="checkbox"/>	All <input type="button" value="v"/>	<input type="checkbox"/>
8	<input type="checkbox"/>	1	<input type="checkbox"/>	All <input type="button" value="v"/>	<input type="checkbox"/>
9	<input type="checkbox"/>	109	<input type="checkbox"/>	All <input type="button" value="v"/>	<input type="checkbox"/>
10	<input type="checkbox"/>	110	<input type="checkbox"/>	All <input type="button" value="v"/>	<input type="checkbox"/>
11	<input type="checkbox"/>	101	<input type="checkbox"/>	All <input type="button" value="v"/>	<input type="checkbox"/>
12	<input type="checkbox"/>	102	<input type="checkbox"/>	All <input type="button" value="v"/>	<input type="checkbox"/>

3. After creating the VLAN, you should add the IP domains to the related VLANs.

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Basic Setting

Advanced Application

IP Application

Management

System Info

General Setup

Switch Setup

IP Setup

Port Setup

IP Setup

Default Gateway
0.0.0.0

Domain Name Server
0.0.0.0

Default Management
☒ In-band ☐ Out-of-band

Management IP Address

IP Address
192.168.0.1

IP Subnet Mask
255.255.255.0

Default Gateway
0.0.0.0

Apply

Cancel

IP Interface

IP Address
192.168.102.1

IP Subnet Mask
255.255.255.0

VID
102

Add

Cancel

IP Interface

IP Address
192.168.102.1

IP Subnet Mask
255.255.255.0

VID
102

Add

Cancel

Index	IP Address	IP Subnet Mask	VID	Delete
1	111.111.111.111	255.255.255.0	100	<input type="checkbox"/>
2	192.168.1.1	255.255.255.0	1	<input type="checkbox"/>
3	192.168.2.1	255.255.255.0	2	<input type="checkbox"/>
4	192.168.101.1	255.255.255.0	101	<input type="checkbox"/>
5	192.168.102.1	255.255.255.0	102	<input type="checkbox"/>
6	192.168.109.1	255.255.255.0	109	<input type="checkbox"/>
7	192.168.110.1	255.255.255.0	110	<input type="checkbox"/>

Delete

Cancel

- Since this GS-4024 works as an IGMP Router, you need to enable IGMP V2 on the multicast ip interface (which is the dummy interface). Please note that since GS-4024 works as an IGMP Router here, you cannot enable

IGMP Snooping at the same time because IGMP Snooping is an L2 feature.

MENU
Basic Setting
Advanced Application
IP Application
Management

Static Routing
RIP
OSPF
IGMP
DVMRP
IP Multicast
DiffServ
DHCP
VRRP

IGMP

Active ☒

Index	Network	Version
1	111.111.111.111/24	IGMP-v2
2	192.168.1.1/24	None
3	192.168.2.1/24	None
4	192.168.101.1/24	None
5	192.168.102.1/24	None
6	192.168.109.1/24	None
7	192.168.110.1/24	None

Apply Cancel

Now we have done everything we needed to do on the IGMP Router <GS-4024>.

Configuration via Web on L2 Switch [ES-3124]

- At the very beginning, we should create our MVR VLAN First (which is VLAN100). We will create this multicast VLAN in another way. First, access the GUI of your Switch. Then click “Advanced Application” on the left and choose “**Multicast**”. Finally, in the right frame, click **Multicast Setting** > **MVR** to setup your Multicast VLAN.

Multicast Setting **Multicast Status** **IGMP Filtering Profile** **MVR**

IGMP Snooping

Active ☒

Host Timeout 260

Leave Timeout 2

802.1p Priority No-Change

IGMP Filtering

Active ☐

Unknown Multicast Frame ☐ Flooding ☒ Drop

Reserved Multicast Group ☒ Flooding ☐ Drop

Port	Immed. Leave	Group Limited	Max Group Num.	IGMP Filtering Profile	IGMP Querier Mode
*	<input type="checkbox"/>	<input type="checkbox"/>		Default	Auto
1	<input type="checkbox"/>	<input type="checkbox"/>	0	Default	Auto
2	<input type="checkbox"/>	<input type="checkbox"/>	0	Default	Auto
3	<input type="checkbox"/>	<input type="checkbox"/>	0	Default	Auto
4	<input type="checkbox"/>	<input type="checkbox"/>	0	Default	Auto
5	<input type="checkbox"/>	<input type="checkbox"/>	0	Default	Auto
6	<input type="checkbox"/>	<input type="checkbox"/>	0	Default	Auto

- Name this Multicast VLAN and assign it a VLAN ID. Activate this VLAN; Pick port 1, 2 and 27 as the receiver ports and port 28 as the Source Port. In this scenario, we need to make the source ports retain the VLAN “tag”. Thus, we carry out the following setting. Click “add” to create this VLAN. When the VLAN is set, click “Group Configuration” in the upper right corner to start creating our Multicast Groups.

MVR

Multicast Setting

Group Configuration

Active

☒

Name

100

Multicast VLAN ID

100

802.1p Priority

0

Mode

☒ Dynamic ☐ Compatible

Port	Source Port	Receiver Port	None	Tagging
*		Source Port		<input type="checkbox"/>
1	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
2	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
3	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="checkbox"/>
4	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="checkbox"/>
25	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="checkbox"/>
26	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="checkbox"/>
27	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>
28	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>

Add

Cancel

VLAN	Active	Name	Mode	Source Port	Receiver Port	802.1p	Delete
100	Yes	100	Dynamic	28	1-2,27	0	<input type="checkbox"/>

Delete

Cancel

- First, choose the Multicast VLAN ID that we just created (which is VLAN100). Give this group a descriptive name for easier future identification. Set the range of IP addresses defining the Multicast group. Finally, click “Add” to create this group. (In this scenario, we use 224.10.10.0 ~ 224.10.10.50)

Group Configuration

MVR

Multicast VLAN ID

100

Name	Start Address	End Address
224.10.10.0	224.10.10.0	224.10.10.50

Add

Cancel

- At this point we go back to the “Multicast Setting” page and enable “IGMP Snooping”. (Since MVR needs IGMP Snooping). For Unknown Multicast Frame, we prefer “Drop” here in order to avoid sending any Multicast Video when there is no subscriber. (Nobody joining that multicast group).

Port	Immed. Leave	Group Limited	Max Group Num.	IGMP Filtering Profile	IGMP Querier Mode
*	<input type="checkbox"/>	<input type="checkbox"/>		Default	Auto
1	<input type="checkbox"/>	<input type="checkbox"/>	0	Default	Auto
2	<input type="checkbox"/>	<input type="checkbox"/>	0	Default	Auto
3	<input type="checkbox"/>	<input type="checkbox"/>	0	Default	Auto
4	<input type="checkbox"/>	<input type="checkbox"/>	0	Default	Auto
5	<input type="checkbox"/>	<input type="checkbox"/>	0	Default	Auto
6	<input type="checkbox"/>	<input type="checkbox"/>	0	Default	Auto

- Right after that you will need to create all other non-Multicast VLANs on this Switch. Once you completed creating those VLANs, your VLAN status should look like the one below.

Index	VID	Elapsed Time	Status
1	1	0:20:21	Static
2	100	0:20:21	Other
3	101	0:00:26	Static
4	102	0:00:05	Static

VID	Port Number																Elapsed Time	Status
	2	4	6	8	10	12	14	16	18	20	22	24	26	28				
1	U	U	U	U	U	U	U	U	U	U	U	U	U	U	0:26:49	Static		
	U	U	U	U	U	U	U	U	U	U	U	U	U	U				

VLAN Detail															VLAN Status	
VID	Port Number														Elapsed Time	Status
	2	4	6	8	10	12	14	16	18	20	22	24	26	28		
	1	3	5	7	9	11	13	15	17	19	21	23	25	27		
100	U	-	-	-	-	-	-	-	-	-	-	-	-	T	0:05:54	Other
	U	-	-	-	-	-	-	-	-	-	-	-	-	T		

VLAN Detail															VLAN Status	
VID	Port Number														Elapsed Time	Status
	2	4	6	8	10	12	14	16	18	20	22	24	26	28		
	1	3	5	7	9	11	13	15	17	19	21	23	25	27		
101	-	-	-	-	-	-	-	-	-	-	-	-	-	T	0:07:50	Static
	U	-	-	-	-	-	-	-	-	-	-	-	-	-		

VLAN Detail															VLAN Status	
VID	Port Number														Elapsed Time	Status
	2	4	6	8	10	12	14	16	18	20	22	24	26	28		
	1	3	5	7	9	11	13	15	17	19	21	23	25	27		
102	U	-	-	-	-	-	-	-	-	-	-	-	-	T	0:07:47	Static
	-	-	-	-	-	-	-	-	-	-	-	-	-	-		

6. Below are their related PVID settings.

VLAN Port Setting				Protocol Based Vlan	VLAN Status
GVRP		<input type="checkbox"/>			
Port isolation		<input type="checkbox"/>			

Port	Ingress Check	PVID	GVRP	Acceptable Frame Type	VLAN Trunking
*	<input type="checkbox"/>		<input type="checkbox"/>	All <input type="button" value="v"/>	<input type="checkbox"/>
1	<input type="checkbox"/>	101	<input type="checkbox"/>	All <input type="button" value="v"/>	<input type="checkbox"/>
2	<input type="checkbox"/>	102	<input type="checkbox"/>	All <input type="button" value="v"/>	<input type="checkbox"/>
3	<input type="checkbox"/>	1	<input type="checkbox"/>	All <input type="button" value="v"/>	<input type="checkbox"/>
4	<input type="checkbox"/>	1	<input type="checkbox"/>	All <input type="button" value="v"/>	<input type="checkbox"/>
5	<input type="checkbox"/>	1	<input type="checkbox"/>	All <input type="button" value="v"/>	<input type="checkbox"/>
25	<input type="checkbox"/>	1	<input type="checkbox"/>	All <input type="button" value="v"/>	<input type="checkbox"/>
26	<input type="checkbox"/>	1	<input type="checkbox"/>	All <input type="button" value="v"/>	<input type="checkbox"/>
27	<input type="checkbox"/>	1	<input type="checkbox"/>	All <input type="button" value="v"/>	<input type="checkbox"/>
28	<input type="checkbox"/>	1	<input type="checkbox"/>	All <input type="button" value="v"/>	<input type="checkbox"/>

Here we have done everything we needed to do on the Edge Switch <ES-3124>.

Configuration via Web [GS-4012F]

- At the very beginning, we should create our MVR VLAN First (which is VLAN100). We will create this multicast VLAN in another way. First, access the GUI of your Switch. Then click “Advanced Application” on the left and choose “**Multicast**”. Finally, in the right frame, click **Multicast Setting** > **MVR** to setup your Multicast VLAN.

Port	Immed. Leave	Group Limited	Max Group Num.	IGMP Filtering Profile	IGMP Querier Mode
*	<input type="checkbox"/>	<input type="checkbox"/>		Default	Auto
1	<input type="checkbox"/>	<input type="checkbox"/>	0	Default	Auto
2	<input type="checkbox"/>	<input type="checkbox"/>	0	Default	Auto
3	<input type="checkbox"/>	<input type="checkbox"/>	0	Default	Auto
4	<input type="checkbox"/>	<input type="checkbox"/>	0	Default	Auto
5	<input type="checkbox"/>	<input type="checkbox"/>	0	Default	Auto
6	<input type="checkbox"/>	<input type="checkbox"/>	0	Default	Auto

- Name this Multicast VLAN and assign it a VLAN ID. Active this VLAN; Pick port 11 as the receiver port; Pick ports 9 and 10 as the Source Ports. In this scenario, we need to make the source ports retain the VLAN “tag”. Thus, we carry out the following setting. Click “add” to create this VLAN. When the VLAN is set, click “Group Configuration” in the upper right corner to create the Multicast Groups.

Port	Source Port	Receiver Port	None	Tagging
*		Source Port ▼		<input type="checkbox"/>
1	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="checkbox"/>
2	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="checkbox"/>
3	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="checkbox"/>
4	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="checkbox"/>
5	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="checkbox"/>
6	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="checkbox"/>
7	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="checkbox"/>
8	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="checkbox"/>
9	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
10	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
11	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>
12	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="checkbox"/>

VLAN	Active	Name	Mode	Source Port	Receiver Port	802.1p	Delete
100	Yes	100	Dynamic	11	9-10	0	<input type="checkbox"/>

- First of all, choose the Multicast VLAN ID that we just created (which is VLAN100) and give it a descriptive name. Set the IP range defining the Multicast group. Finally, click “Add” to create this group. (In this scenario, we use 224.10.10.0 ~ 224.10.10.50)

Group Configuration MVR

Multicast VLAN ID:

Name	Start Address	End Address
224.10.10.0	224.10.10.0	224.10.10.50

- Now go back to the “Multicast Setting” page and enable “IGMP Snooping” (Since MVR needs IGMP Snooping). For Unknown Multicast Frame, we prefer to set the radio button to “Drop” in order to avoid sending any Multicast Video with no subscriber (Nobody joining that multicast group).

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Mirroring

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Port Security

Classifier

Policy Rule

Queuing Method

VLAN Stacking

Multicast

DHCP Relay

Multicast Setting

Multicast Status

IGMP Filtering Profile

MVR

IGMP Snooping

Active ☒

Host Timeout 260

Leave Timeout 2

802.1p Priority No-Change

IGMP Filtering

Active ☐

Unknown Multicast Frame ☐ Flooding ☒ Drop

Reserved Multicast Group ☒ Flooding ☐ Drop

Port	Immed. Leave	Group Limited	Max Group Num.	IGMP Filtering Profile	IGMP Querier Mode
*	<input type="checkbox"/>	<input type="checkbox"/>		Default	Auto
1	<input type="checkbox"/>	<input type="checkbox"/>	0	Default	Auto
2	<input type="checkbox"/>	<input type="checkbox"/>	0	Default	Auto
3	<input type="checkbox"/>	<input type="checkbox"/>	0	Default	Auto
4	<input type="checkbox"/>	<input type="checkbox"/>	0	Default	Auto
5	<input type="checkbox"/>	<input type="checkbox"/>	0	Default	Auto
6	<input type="checkbox"/>	<input type="checkbox"/>	0	Default	Auto

4. Right after that you will need to create all other non-Multicast VLANs on this Switch. Once you completed creating those VLANs, your VLAN status should look like the one shown on the figure below.

VLAN Status

VLAN Port Setting

Static VLAN

The Number of VLAN = 4

Index	VID	Elapsed Time	Status
1	1	1:00:00	Static
2	100	0:05:04	Other
3	109	0:00:22	Static
4	110	0:00:03	Static

VLAN Detail

VLAN Status

VID	Port Number						Elapsed Time	Status
	2	4	6	8	10	12		
	1	3	5	7	9	11		
1	U	U	U	U	U	U	1:00:56	Static

VLAN Detail

VLAN Status

VID	Port Number						Elapsed Time	Status
	2	4	6	8	10	12		
	1	3	5	7	9	11		
100	-	-	-	-	U	-	0:32:28	Other
	-	-	-	-	U	T		

VLAN Detail

[VLAN Status](#)

VID	Port Number						Elapsed Time	Status
	2	4	6	8	10	12		
	1	3	5	7	9	11		
109	-	-	-	-	-	-	0:02:48	Static
	-	-	-	-	U	T		

VLAN Detail

[VLAN Status](#)

VID	Port Number						Elapsed Time	Status
	2	4	6	8	10	12		
	1	3	5	7	9	11		
110	-	-	-	-	U	-	0:00:10	Static
	-	-	-	-	-	T		

5. Below are the related PVID settings.

VLAN Port Setting

[VLAN Status](#)

GVRP	<input type="checkbox"/>
Port isolation	<input type="checkbox"/>

Port	Ingress Check	PVID	GVRP	Acceptable Frame Type	VLAN Trunking
*	<input type="checkbox"/>		<input type="checkbox"/>	All <input type="button" value="v"/>	<input type="checkbox"/>
1	<input type="checkbox"/>	1	<input type="checkbox"/>	All <input type="button" value="v"/>	<input type="checkbox"/>
2	<input type="checkbox"/>	1	<input type="checkbox"/>	All <input type="button" value="v"/>	<input type="checkbox"/>
3	<input type="checkbox"/>	1	<input type="checkbox"/>	All <input type="button" value="v"/>	<input type="checkbox"/>
4	<input type="checkbox"/>	1	<input type="checkbox"/>	All <input type="button" value="v"/>	<input type="checkbox"/>
5	<input type="checkbox"/>	1	<input type="checkbox"/>	All <input type="button" value="v"/>	<input type="checkbox"/>
6	<input type="checkbox"/>	1	<input type="checkbox"/>	All <input type="button" value="v"/>	<input type="checkbox"/>
7	<input type="checkbox"/>	1	<input type="checkbox"/>	All <input type="button" value="v"/>	<input type="checkbox"/>
8	<input type="checkbox"/>	1	<input type="checkbox"/>	All <input type="button" value="v"/>	<input type="checkbox"/>
9	<input type="checkbox"/>	109	<input type="checkbox"/>	All <input type="button" value="v"/>	<input type="checkbox"/>
10	<input type="checkbox"/>	110	<input type="checkbox"/>	All <input type="button" value="v"/>	<input type="checkbox"/>
11	<input type="checkbox"/>	1	<input type="checkbox"/>	All <input type="button" value="v"/>	<input type="checkbox"/>
12	<input type="checkbox"/>	1	<input type="checkbox"/>	All <input type="button" value="v"/>	<input type="checkbox"/>

Apply Cancel

Here we have done everything we needed to do on the Edge Switch <GS-4012F>.

Configuration via CLI on L3 Switch [GS-4024]

Connect your PC or Notebook to the Switch Console port.

1. Open your Terminal program.(e.g. Hyper Terminal in Windows System)
2. Make sure that your port settings are
bps:9600
Data bits:8
Parity: None
Stop bits:1
Flow control: None:
3. After you have connected successfully, enter the correct user name and the password.
4. Issue “en” or “enable” to go into the privileged mode. Then put “config” to switch to the configuration mode.

Issue the following commands to setup your Switch in this scenario.

To Create VLAN2 with its related IP domain:

```
vlan 2
  name server
  normal 1,3-24
  fixed 2
  forbidden ""
  untagged 2
  ip address 192.168.2.1 255.255.255.0
exit
```

To Create VLAN100 (Multicast VLAN) with its related IP domain (the dummy interface):

```
vlan 100
  name MVR
  normal 1-23
  fixed 24
```

```
forbidden ""
untagged ""
ip address 111.111.111.111 255.255.255.0
exit
```

To Create VLAN101 with its related IP domain:

```
vlan 101
name 101
normal 1-10,12-23
fixed 11,24
forbidden ""
untagged 11
ip address 192.168.101.1 255.255.255.0
exit
```

To Create VLAN102 with its related IP domain:

```
vlan 102
name 102
normal 1-11,13-23
fixed 12,24
forbidden ""
untagged 12
ip address 192.168.102.1 255.255.255.0
exit
```

To Create VLAN109 with its related IP domain:

```
vlan 109
name 109
normal 1-8,10-23
fixed 9,24
forbidden ""
untagged 9
ip address 192.168.109.1 255.255.255.0
exit
```

To Create VLAN110 with its related IP domain:

```
vlan 110
```

```
name 110
normal 1-9,11-23
fixed 10,24
forbidden ""
untagged 10
ip address 192.168.110.1 255.255.255.0
exit
```

To enable the IGMP Routing:

```
router igmp
exit
```

To set PVID of Port 2:

```
interface port-channel 2
    pvid 2
exit
```

To set PVID of Port 9:

```
interface port-channel 9
    pvid 109
exit
```

To set PVID of Port 10:

```
interface port-channel 10
    pvid 110
exit
```

To set PVID of Port 11:

```
interface port-channel 11
    pvid 101
exit
```

To set PVID of Port 12:

```
interface port-channel 12
    pvid 102
exit
```

To enable IGMP v2 on the dummy IP interface:

interface route-domain 111.111.111.111/24

ip igmp v2

exit

Configuration via CLI on L2 Switch [ES-3124]

Connect the Switch Console port with your PC or Notebook.

1. Open your Terminal program.(Ex, Hyper Terminal in Windows System)
2. Make sure that your port settings are
bps:9600
Data bits:8
Parity: None
Stop bits:1
Flow control: None:
3. After you connected successfully, give the correct user name and password.
4. Put "en" or "enable" to go into the privileged mode. Then put "config" to go into the configuration mode.

Issue the following commands to setup your Switch in this scenario.

To Setup VLAN 101:

```
vlan 101
  name Data
  normal 2-27
  fixed 1,28
  forbidden ""
  untagged 1
exit
```

To Setup VLAN 102:

```
vlan 102
  name Data
  normal 1,3-27
  fixed 2,28
  forbidden ""
```

```
untagged 2
exit
```

To enable IGMP Snooping with unknown Multicast “Drop”:

```
igmp-snooping
igmp-snooping unknown-multicast-frame drop
```

To set PVID of Port 1:

```
interface port-channel 1
    pvid 101
exit
```

To set PVID of Port 2:

```
interface port-channel 2
    pvid 102
exit
```

To create the MVR VLAN 100 with group information:

```
mvr 100
    source-port 28
    receiver-port 1-2,27
    name 100
    tagged 27-28
    group 224.10.10.0 start-address 224.10.10.0 end-address 224.10.10.50
exit
```

Configuration via CLI [GS-4012F]

Connect the Switch Console port with your PC or Notebook.

1. Open your Terminal program.(Ex, Hyper Terminal in Windows System)
2. Make sure that your port settings are
bps:9600
Data bits:8
Parity: None
Stop bits:1
Flow control: None:
3. After you connected successfully, give the correct user name and password.
4. Put "en" or "enable" to go into the privileged mode. Then put "config" to go into the configuration mode.

Issue the following commands to setup your Switch in this scenario.

To Setup VLAN 109:

```
vlan 109
  name 109
  normal 1-8,10,12
  fixed 9,11
  forbidden ""
  untagged 9
exit
```

To Setup VLAN 110:

```
vlan 110
  name 110
  normal 1-9,12
  fixed 10-11
  forbidden ""
  untagged 10
```


exit

To enable IGMP Snooping with unknown Multicast “Drop”:

igmp-snooping

igmp-snooping unknown-multicast-frame drop

To set PVID of Port 9:

interface port-channel 9

pvid 109

exit

To set PVID of Port 10:

interface port-channel 10

pvid 110

exit

To create the MVR VLAN 100 with group information:

mvr 100

source-port 11

receiver-port 9-10

name 100

tagged 11

group 100 start-address 224.10.10.0 end-address 224.10.10.50

exit